

I claim:

1. A steering and suspension system for bicycles and motorcycles comprising a wheel rotatably attached to an axle, said axle rigidly attached to axle brackets at each end of said axle, said axle brackets containing pivot pins, said pivot pins arranged with axes that are perpendicular to the centerline of said axle, side rails positioned along each side of said wheel, said side rails attached pivotally at the forward end to said axle brackets through said pivot pins with axes of said pivot pins perpendicular to longitudinal centerline of said side rails, said side rails attached pivotally at the rear end to rear rail brackets, said rear rail brackets containing pivot pins, said second pivot pin having axes parallel to said first pivot pin axes so that movement of said side rails and said axle is in a plane that is perpendicular to the plane of rotation of said wheel, said rear rail brackets rigidly attached to each end of a rear rail, length of said rear rail chosen to be large enough to allow acceptable steering lock during a turn, said rear rail positioned behind said wheel and perpendicular to the vehicle longitudinal centerline, said rear rail pivoted about a rear rail pivot pin whose axis is perpendicular to the vehicle longitudinal centerline, said rear rail pivot pin attached pivotally at each end to frame brackets, said frame brackets rigidly attached to vehicle frame.
2. The steering and suspension system of claim 1 wherein steering control of said wheel is performed by applying a force in the longitudinal direction to said axle, said force originating from vehicle operator who applies a torque to a vertical steering post through conventional handlebars, said steering post rotatably attached to said vehicle frame and located along the centerline of said vehicle frame, a steering arm rigidly attached to said steering post and extending outward laterally from said steering post thereby converting said torque into a longitudinal force, said longitudinal force transmitted forward by means of a control rod, rear end of said control rod connected to said steering arm by means of a ball joint, forward end of said control rod connected to a steering lever by means of a ball joint, said steering lever rigidly attached to one of said axle brackets which is located on same side of vehicle centerline as that

of said steering arm.

3. The steering and suspension system of claim 1 wherein suspension control of said wheel is performed by a coil-over-shock unit acting on the lower end of a suspension rocker, said suspension rocker pivotally attached to said vehicle frame through a pivot pin which has an axis that is parallel to axis of said rear rail pivot pin, upper end of said suspension rocker pivotally connected to the upper end of a suspension link, lower end of said suspension link pivotally connected to a suspension lever, said suspension lever rigidly attached to said rear rail.

4. The steering and suspension system of claim 1 wherein the longitudinal position of the centerline of said axle relative to an imaginary line connecting the axes of said first pivot pins is chosen to reduce the lateral displacement of the tire contact patch during a turn.